

Atty Docket No.: 10416/22
Serial No. 10/667,583

REMARKS

1. Claim Objections – Claims 17-20

Claims 17-20 are pending in the present application and were objected to in the Office action dated April 16, 2004 as containing informalities, namely lacking antecedent basis for the term "the non-reciprocal circuit element." Claim 17 has been amended to provide proper antecedent basis for this term. Claims 18-20 depend either directly or ultimately from claim 17. Accordingly, Applicant submits that the objections to claims 17-20 have been overcome.

2. Claim Rejections - 35 U.S.C. §102(b) – Claims 9-10, 12-13, 21-23

Claims 9-10, 12-13, 21-23 are pending in the present application and were rejected in the Office action dated April 16, 2004 under 35 U.S.C. § 102(b) as being anticipated by Berndlmaier et al. (U.S. Patent No. 4,323,914). Applicant respectfully traverses this rejection. However, in order to provide clarification only, claims 9 and 12 have been amended. Claim 9 is an independent claim. Claims 10, 12-13, and 21-23 depend from independent claim 9. For brevity, only the bases for the rejection of independent claim 9 is traversed in detail on the understanding that dependent claims are also patentably distinct over the prior art, as they depend directly from independent claim 9. Nevertheless, the dependent claims include additional features that, in combination with those of independent claim 9, provide further, separate, and independent bases for patentability.

The Examiner states "Berndlmaier et al. discloses a substrate, a semiconductor chip, a cover having a flat portion and extended portions, a heat sink (liquid metal) having a projecting portion." However, the Berndlmaier et al. patent does not teach or suggest each and every element of the claimed invention, as amended. Specifically, the claimed invention of the present application, as amended, requires "the heat sink and the semiconductor chip being in contact with each other only at the projecting portion so that there is a space between the substrate and the cap." The Berndlmaier et al. patent does not teach or suggest this element of the claimed invention.

Initially, the Applicant respectfully traverses this rejection since the Applicant does not believe that a heat sink formed of liquid metal can have a projecting portion. However, Applicant submits that even if a heat sink formed of liquid metal could have a projection portion, the configuration of any such projection portion would inevitably be different from a projecting

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portion of a heat sink in the claimed invention. Specifically, in an embodiment in which a heat sink is formed of liquid metal, a space between the substrate, the semiconductor chip, and a cover, would be filled by the liquid metal. As such, it would be impossible to ensure a space for accommodating electronic components whose thickness is usually greater than that of the semiconductor chip.

To the contrary, the present application states that since the heat sink 45 has a projecting portion 45a, there is formed the space 69 for accommodating the electronic components 44, whose thickness is usually greater than that of the semiconductor chip 43 located between the projecting portion 45a of the heat sink 45 and the substrate 41. Supporting material for this amendment is located in the specification of the present application at Page 27, lines 12-20. Accordingly, Applicant respectfully submits that the 35 U.S.C. § 102(b) rejection of claims 9-10, 12-13, 21-23 as unpatentable over the Berndlmaier et al. patent has been overcome.

3. Claim Rejections - 35 U.S.C. §103(a) – Claim 11

Claim 11 is pending in the present application and was rejected in the Office action dated April 16, 2004 under 35 U.S.C. § 103(a) as being unpatentable over the Berndlmaier et al. (U.S. Patent No. 4,323,914) in view of Daves et al. (U.S. Patent No. 6,091,603). Applicant respectfully traverses this rejection. However, in order to provide clarification only, claim 9 has been amended. Claim 9 is an independent claim. Claim 11 depends from independent claim 9. For brevity, the bases for the rejection of independent claim 9 is traversed in detail on the understanding that dependent claim 11 is also patentably distinct over the prior art, as it depends directly from independent claim 9. Nevertheless, dependent claim 11 includes additional features that, in combination with those of independent claim 9, provide further, separate, and independent bases for patentability.

The Examiner admits that the Berndlmaier et al. patent does not disclose that the roof plate is made of aluminum. However, the Examiner also states that the Daves et al. patent teaches the use of a roof plate made of aluminum. Briefly stated, the shortcomings of the Berndlmaier et al. patent have been fully discussed above, and the Daves et al. patent does not resolve any of the Berndlmaier et al. deficiencies. Thus, claim 11 is patentable for the same reasons as stated above in Section 2 with respect to independent claim 9. Namely, the

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Berndlmaier et al. patent and the Daves et al. patent do NOT teach or suggest "the heat sink and the semiconductor chip being in contact with each other only at the projecting portion so that there is a space between the substrate and the cap," as required by the claimed invention. Accordingly, Applicant respectfully submits that the 35 U.S.C. § 103(a) rejection of claim 11 as unpatentable has been overcome.

4. Allowable Subject Matter - 14-16

Claims 14-16 are pending in the present application and were indicated by the Examiner to be directed towards allowable subject matter in the Office action dated April 16, 2004. It was further indicated by the Examiner that claims 14-16 would be allowed if rewritten in independent form to include all of the limitations of the base claim and any intervening claims. Accordingly, claims 14 and 15 have been rewritten in independent form to include all of the limitations of the base claim and any intervening claims. Claim 16 depends from claim 15. Thus, Applicant respectfully submits that claims 14-16 are in condition for allowance.

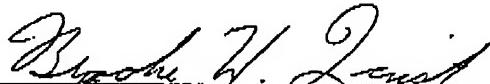
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CONCLUSION

Applicant has made an earnest and bona fide effort to clarify the issues before the Examiner and to place this case in condition for allowance. In view of the foregoing discussions, it is believed clear that the differences between the claimed invention and the prior art are such that the claimed invention is patentably distinct over the prior art. Therefore, consideration and allowance of claims 9-23 is believed to be in order, and an early Notice of Allowance to this effect is respectfully requested. If the Examiner should have any questions concerning the foregoing, the Examiner is invited to telephone the undersigned attorney at (310) 712-8319. The undersigned attorney can normally be reached Monday through Friday from about 9:30 AM to 6:30 PM Pacific Time.

Respectfully submitted,

Dated: 7/16/04


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